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April 9, 2002

William F. Caton  
Acting Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Room TW-A325  
Washington, DC 20554

Re: Loea Communications, Inc.; RM-10288  
Proposal to Adopt Joint Licensing Framework for the 71.0-76.0 GHz and  
81.0-86.0 GHz Bands as Additional Option in the Forthcoming NPRM

Dear Mr. Caton:


Transmitted herewith on behalf of Loea Communications, Inc. ("Loea") is a Briefing Paper that proposes an additional option for incorporation into the Commission's forthcoming notice of proposed rulemaking to establish licensing and service rules for certain millimeter wave radiofrequency bands, including the 71.0-76.0 GHz and 81.0-86.0 GHz bands. Please associate the Briefing Paper with the docket for this rulemaking.

On September 10, 2001, Loea filed a petition for rulemaking seeking the adoption of service rules to govern the licensing and use of the 71.0-76.0 GHz and 81.0-86.0 GHz bands. In its petition, Loea proposed the licensing of these bands under the procedures currently used for point-to-point microwave services. Loea understands that the Commission is evaluating whether other licensing frameworks, including a band manager licensing framework, may be appropriate for these bands. In the enclosed Briefing Paper, Loea proposes that the Commission include a blanket licensing framework as an alternative licensing option in the forthcoming notice of proposed rulemaking. Loea's proposed blanket licensing framework will facilitate low-cost market entry for providers of new services to the public and minimize the administrative and financial burdens associated with spectrum licensing.

William F. Caton  
Acting Secretary  
April 9, 2002  
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Please direct any questions to the undersigned.

Respectfully submitted,

A handwritten signature in black ink that reads "Randall W. Sifers". The signature is written in a cursive style with a large, stylized 'R' and 'S'.

Paul G. Madison  
Randall W. Sifers  
Attorneys for  
Loea Communications, Inc.

Enclosure

cc: Peter A. Tenhula, Senior Legal Advisor to Chairman Powell  
Bryan Tramont, Senior Legal Advisor to Commissioner Abernathy  
Paul Margie, Legal Advisor to Commissioner Copps  
Barry Ohlson, Wireless Telecommunications Bureau

## BRIEFING PAPER

### LOEA COMMUNICATIONS, INC.

#### PROPOSAL TO ADOPT A JOINT LICENSING FRAMEWORK FOR THE 71.0-76.0 GHz AND 81.0-86.0 GHz BANDS

#### I. INTRODUCTION

Loea Communications, Inc. ("Loea") filed a petition for rulemaking seeking the adoption of service rules for the 71.0-76.0 GHz and 81.0-86.0 GHz bands (collectively the "Bands"). In its petition, Loea proposed the licensing of transmission paths under the procedures employed for point-to-point microwave services. Loea continues to support the point-to-point licensing scheme because it will efficiently and expeditiously permit the deployment of this spectrum for service to the public.

In considering a licensing framework for the Bands, the Commission must take into account that there is *absolutely no scarcity* in the Bands. The reason there is no scarcity is that the ability to transmit extremely narrow beams in this spectrum permits an infinite number of paths to be authorized in the Bands. For this reason, a concern has been raised that licensing the Bands on a path-by-path basis may impose significant administrative burdens on the Commission.

There is another important consideration that must be taken into account when authorizing non-government operations in the Bands. Specifically, the Bands are allotted on a co-primary basis between government and non-government use. As such, not only will it be necessary to coordinate non-government paths in the Bands, but it will also be necessary to coordinate government paths, which in some instances are classified or confidential.

Loea is aware that the Commission is evaluating whether a band manager-licensing framework is appropriate for the Bands. Loea is concerned that a band manager-licensing framework will actually work to delay the deployment of services in the Bands. For example, no provider would be able to raise the funds necessary to construct significant service networks based upon leases for the use of spectrum with a band manager licensee because no one would invest in a provider that was not vested in the most important asset necessary to conduct its business.

Another significant shortcoming of band manager licensing is that, because of the propagation characteristics of the spectrum and the lack of scarcity, providers may enter the market today or at any time in the future. With a band manager construct, the number of licensees is determined on a one-time basis. This creates artificial scarcity and restricts marketplace entry for providers who develop new and innovative services.

As an *additional option* for incorporation in the Commission's notice of proposed rulemaking for the use of the Bands, this paper proposes a blanket licensing framework as an alternative to path-by-path and band manager licensing that will resolve the above-stated concerns.

## II. BACKGROUND

### A. Current Use of the Bands

The Bands are currently allocated to fixed and mobile services on a co-primary basis for both government and non-government operations. The Commission has not adopted service rules for the Bands, and therefore there are no non-government incumbent operations in the Bands. There also are virtually no government users of this spectrum, either.

### B. Band Characteristics

#### 1. *Propagation*

The Bands propagate most efficiently in cohesive beams that resemble laser beams. When originated, the beams create a three-dimensional pipe along a straight and narrow path. The narrow path of the beams (typically less than 0.5 degrees) makes *interference among paths virtually impossible* unless the beams are directly aligned.

#### 2. *Interference Resolution*

In the event that the potential for harmful interference is predicted, it can be easily resolved through an engineering solution as simple as the realignment of the transmit or receive dishes. As a result, an almost *infinite number* of users and paths are possible. This means that new users would be able to connect new points of service without causing harmful interference to existing users, even at the same location.

#### 3. *Channelization of the Spectrum Blocks is NOT Necessary Or Desirable*

In its petition for rulemaking, Loea proposed that the Commission authorize the use of the entire 71.0-76.0 GHz and 81.0-86.0 GHz band block to each operational path. Loea demonstrated that the entirety of both bands is needed to deliver reliable wireless broadband capacity to meet growth projections for the next three decades. Loea also demonstrated that channelization of these bands is unnecessary because the narrow nature of the radio beams means there is virtually no possibility that interference would be encountered, or, if encountered, be unresolvable. As such, channelization of the blocks is not only unnecessary, it is counterproductive to bringing these services to the public. Any one provider can use the bands in close proximity to any number of other providers also using the entire spectrum block.

### **III. BLANKET LICENSING OF THE 71.0-76.0 GHZ AND 81.0-86.0 GHZ SPECTRUM**

#### **A. Goals to be Achieved**

Beginning with the premise that there is no scarcity in the Bands, the Commission should create a licensing framework that will allow easy low-cost market entry for providers of new services to the public. To that end, the Commission should seek to achieve the following goals:

- + the implementation of a licensing framework that does not artificially create scarcity and permits market entry by any number of providers at any time;
- + the protection of transmission paths without overburdening the licensing resources of the Commission (including coordination among non-government and government paths); and
- + providing a licensing environment that is conducive to swift and economical provision of service to the public.

#### **B. The Licensing Process**

The middle ground between individual path licensing by the Commission and band manager licensing that would achieve the goals specified above is blanket licensing. Under a blanket licensing framework, each entity wishing to utilize the Bands would apply for and obtain a one-time blanket license. The blanket license would allow the licensee to operate paths anywhere in the United States, subject to coordination, at any time during the license term without further Commission approval or action.

The Commission's Universal Licensing System would be utilized for the limited blanket licensing purpose without materially impacting the Commission's current licensing resources. The coordination of transmission paths would be conducted outside of the Commission utilizing an industry sponsored and operated coordination database. Path usage information would only be filed with the Band coordinator and would not be filed with, or processed by, the Commission.

##### **1. Coordination**

###### **a). Paths and Priority**

The operation of Band paths under the blanket license would be predicated upon prior coordination of the path. Once coordinated, the path could be immediately utilized. The priority of an existing path versus future paths would be determined on a first-in-time basis as reflected in the coordination database.

b). Coordination Database

A single coordination database would be used (dipped) by blanket license applicants to determine the potential for harmful interference to existing paths. The database coordinator would be a not-for-profit entity created and operated by the industry. The entity could be funded through coordination fees paid by the blanket licensees and other users of the database.

c). Special Considerations Regarding Government Paths

The greatest benefit of a coordination database is that it will allow both government and non-government users to coordinate paths to avoid interference and establish priority. Loea is aware, however, that there will sometimes be special concerns regarding the disclosure of the use by the government of certain Band paths. Specifically, there is little doubt that the technology proposed by Loea and others will have significant military and homeland defense applications and Loea is already cognizant of possible government paths for which priority and confidentiality would need to be established.

If the government desires to utilize the coordination database in conjunction with non-government users, the database could maintain several levels of security allowing for path priority in the coordination process without disclosing the exact nature or users of such paths. In addition, the database operator would be approved by the government and be required to obtain any necessary government security clearances to perform its duties. The government, *i.e.*, NTIA, would determine the process for the use of the database by government users.

d). Creation of the Path Coordinator

To the extent that it is desirable, Loea will commit resources to the creation of the non-profit path coordinator. Loea expects the government to soon increase its use of the Bands and it will be extremely beneficial to capture the government paths in a coordination database before the process becomes too unwieldy. Loea maintains classified areas on its premises in which the coordination database could be initially housed.

2. *Transfers And Assignments*

To the extent that the Commission wishes to approve transfers or assignments of blanket licenses, it could do so under the existing Part 1 rules relating to wireless carriers. To the extent that the Commission wishes to avoid the administrative burdens regarding transfer and assignment of blanket licenses, it could simply require that prior to taking operational control of an upper millimeter wave path, an entity must have first obtained a blanket license. Under either process, the path registration information in the coordination database would be updated or modified without expenditure of the Commission's resources.

### **C. Benefits**

A blanket license framework with path coordination to avoid harmful interference and to establish path priority will have many significant benefits. First, it conserves the Commission's resources. Under a blanket license framework, an applicant would only file one application with the Commission to be authorized to use the Bands. This is in lieu of an application for each and every path that would be deployed, and as such, represents a significant savings in resources. In addition, because communications in the Bands represent the cutting edge of technology, Loea anticipates that a very limited number of applicants initially would seek blanket licenses.

Second, blanket licensing would resolve the deficiencies created by utilizing a band manager licensing framework for the Bands. Specifically, utilizing a band manager framework would create scarcity where there is none. The lack of scarcity, meaning open market entry, is an extremely desirable attribute of the Bands because new services may be created and provided to the public over time without the added cost of leasing the spectrum from some third-party. Licensing the Bands without the added costs of band managers will mean lower cost services for consumers.

In addition, the Commission must realize that it will be nearly impossible for providers to obtain financing for large scale networks if the provider does not itself hold the necessary authorization to provide its services. It is simply too great a risk to invest funds in a provider that relies on spectrum leases with a band manager company in which the provider has no financial or other control. If the band manager enters into bankruptcy, the provider's operations and its ability to continue are at significant risk.

Third, in its analysis of the marketplace, Loea has determined that it, and other providers of services in the Bands, must be able to complete the path authorization process for under \$500 (including coordination) or the services will be rejected by consumers as too costly. A blanket license process will not only significantly reduce the Commission's administrative burdens with respect to the Bands, but also will allow providers, through a not-for-profit coordinator, to bring the services to consumer at lower cost. As such, the public will benefit because low cost broadband services will be brought to those areas that would likely never enjoy such services. Of course, the economic benefit from the use of the Bands will not reside in spectrum auction revenues, but in the sale of equipment and services and the creation of jobs today and in the future.

Finally, because the Bands are shared with the government and government applications may involve sensitive military and homeland defense initiatives, the creation of a secure database, to be utilized by the government to protect its paths or to determine where non-government paths have been coordinated, will allow this spectrum to be shared by government and non-government users in a simple and efficient manner.